CLAIMS

What is claimed is:

1. A device for connecting together a vertically disposed roller screw and roller nut assembly to a stationary member and moving member, said device comprising:

a bearing housing attached onto a fixed end of said roller screw;

said bearing housing including at least one bearing and two bearing house pivots radially disposed 180° apart on a horizontal plane perpendicular to the roller screw longitudinal axis;

a first universal ring concentrically surrounding said bearing housing;

said first universal ring including two mating pivots mated with said two bearing house pivots and two attachment pivots spacedly, radially disposed 90° from said mating pivots mated with corresponding pivots of the stationary member;

a roller nut mount rigidly attached to said roller nut;

said roller nut mount including two roller nut mount pivots radially disposed 180° apart on a horizontal plane perpendicular to the roller screw longitudinal axis; and

a second universal ring concentrically surrounding said roller nut mount;

said second universal ring including two mating pivots mated with said two roller nut mount pivots and two attachment pivots spacedly, radially

disposed 90° from said mating pivots mated with corresponding pivots of the moving member.

2. The device of claim 1 wherein an axis Y defined by said two attachment pivots of said first universal ring is parallel to an axis Y_1 defined by said two attachment pivots of said second universal ring.

3. The device of claim 1 wherein said roller nut is driven by rotation of said roller screw and said roller screw is rotated by a drive mechanism.

4. The device of claim 3 wherein said drive mechanism is a combination of a gear box and a motor.

5. The device of claim 3 wherein said drive mechanism is loosely coupled to said roller screw.

6. The device of claim 3 wherein said drive mechanism is fixedly attached to said bearing housing.

7. A device for connecting together a roller screw and roller nut assembly to a stationary member and moving member, said device comprising:

a bearing housing fixedly attached onto the roller screw;

said bearing housing being pivotally attached to the stationary member; and

a roller nut mount rigidly attached to the roller nut;

said roller nut mount being pivotally attached to the moving member.

8. A method for connecting together a roller screw and roller nut assembly to a stationary member and moving member, said method comprising the steps of:

pivotally attaching the roller screw and roller nut assembly to a stationary member at upper attachment points;

pivotally attaching the roller screw and roller nut assembly to a moving member at lower attachment points; and

arranging the pivots such that axes defined by pivot points at the stationary member are parallel to axes defined by pivot points at the moving member whereby the roller screw is allowed to float in any direction that the moving member takes and side loading due to off-set loads being exerted back into the roller screw from the mating structure is eliminated.